

## **AN ENCASEMENT THAT PREVENTS ALLERGIC REACTIONS**

### **CROSS REFERENCE TO RELATED APPLICATION**

This application claims priority of U.S. Provisional Patent Application No. 60/418,464 by Emilio Saturno, MD, filed October 15, 2002, titled AN ENCASEMENT THAT PREVENTS ALLERGIC REACTIONS, which is incorporated herein by reference.

### **BACKGROUND OF THE INVENTION**

As many as 50 million people, in the United States suffer from allergic disease. These allergic diseases are the sixth leading cause of chronic disease in the United States. In 1993, it was estimated that total cost associated with allergic rhinitis in the United States was \$3.4 billion, of which \$2.3 billion represents medications and \$1.1 billion represents physician billing. Asthma affects more than 15 million people in the United States and is the most common serious chronic disease of childhood, affecting nearly five million children.

It has been shown that asthma attacks can be brought on by exposure to certain types of particulate matter, such as dust mites. The most compelling evidence for the role of dust mites in asthma comes from studies of allergen avoidance, either through environmental control in the home or the removal of mite-allergic patients from their homes. Several studies have demonstrated a striking association between asthma development and mite sensitivity, indicating that allergen avoidance early in life could prevent the development of asthma in some patients. Extensive evidence also exists to support a relationship between ongoing mite exposure and disease activity. Similar studies have suggested that exposure to high concentrations of indoor allergens is associated with higher rates of asthma in children or an earlier age of disease onset. One study found the relative risk of asthma at age 11 to be 4.8 times greater if the child was exposed to high levels of dust mites in infancy. Thus, reducing environmental triggers at home, like house dust mite, can help in the control of asthma symptoms. Parents with

allergies or asthma can make the recommended environmental changes and use the preventative strategies to help reduce or delay the occurrence of allergies and asthma in their children.

People spend more time in their bedroom than any other room. Therefore, most allergists prefer to direct people to conduct the most intense allergy proofing towards the bedroom. The most common indoor allergen that triggers symptoms is the house dust mite, a microscopic insect related to spiders that has a strong attraction to us, as it eats our dander (dead skin flakes). The part that causes allergic symptoms is actually the mite's fecal particles, which are about the size and shape of a microscopic grain of pollen. Unlike pollen, however, these particles are heavy, and are only airborne for an hour or so after dusting and vacuuming. Dust mites like to burrow into pillows, mattresses, feathered bedding, stuffed animals, rugs and upholstered furniture. They are most concentrated in our bedding. To combat their allergens, dust mite proof encasings can be used on the mattress, pillows, box springs and feather comforters, but other items such as stuffed animals must be removed.

The removal of children's beloved stuffed animals from their bedrooms can be difficult on the child as well as on the parent having to make such an important decision to safe guard the child's health. A need exists to develop a device, which would allow these children to keep their stuffed animals and toys in their bedrooms without negatively affecting their health.

## **SUMMARY OF INVENTION**

The present invention discloses an encasement for completely enclosing an object, such as a toy stuffed animal, that may cause an allergic reaction. The encasement comprises a cover defining an inner space, such as a sack. The encasement comprises a material, which prevents the passage of particulate matter; including dust and dust mites, a window for viewing the object, and an enclosable means for enclosing the object inside the encasement. In another embodiment, the encasement of the present invention

comprises a see-through material, which allows the object to be viewed and prevents the passage of particulate matter and an enclosable means for enclosing the object inside the encasement. In yet another embodiment, the encasement of the present invention comprises a stretchable material, which conforms to the shape of the object while preventing the passage of particulate matter and an enclosable means for enclosing the object inside the encasement.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 illustrates the method of enclosing a stuffed animal into the encasement of the present invention.

Figure 2 depicts one embodiment of the encasement of the present invention.

Figure 3 illustrates another embodiment of the encasement of the present invention.

Figure 4 shows yet another embodiment of the encasement of the present invention.

Figure 5 shows a different embodiment of the present invention wherein the material used is see-through, stretchable or both.

## **DETAILED DESCRIPTION OF INVENTION**

The present invention discloses an encasement, shown in Figures 1-4, for completely enclosing an object **4** comprising a material **1** for preventing the passage of particulate matter, a window **2** for viewing the object inside, and an enclosable means **3** for enclosing the object inside the encasement.

The present invention also discloses an encasement, shown in Figure 5, for completely enclosing an object 3 comprising a see-through material 1 for viewing the object and for preventing the passage of particulate matter and an enclosable means 2 for enclosing the object inside the encasement.

The encasement of the present invention is made of material 1 (see Figures 1-4) that is a material with a construction that prevents the passage of particulate matter. Suitable materials include washable tightly weaved fabrics made of cotton, polyester, plastic, polypropylene and are incorporated into commercially available products for covering pillows, mattresses, box springs and comforters, which are marketed to allergy sufferers. It is understood that some of these fabrics may be see-through as defined herein. Such material include tightly woven yarns with 200 thread count or higher (lower thread counts may also work if they have a tight enough weave to prevent the passage of particulate matter) used in commercially available encasements with the product names Cotton-Guard Ultra, SatinSoft Supreme, SatinSoft Classic, SofTEK and Aller-Ease Cotton. In addition, such materials include 100% cotton and cotton/polyester blends of various ratios such as 60%/40%, 25%/75% and 50%/50%. Such materials also include laminated (such as 100% polyester interlock knit laminated to a 1 mil microvented polyurethane membrane), and multi-layer fabrics. Some of the fabrics identified above are available from and used in products available from the National Allergy Supply, Inc. (Duluth, Georgia), American Textile Company (Pittsburgh, Pennsylvania), Allergy Solutions, Inc. (Chadds Ford, Pennsylvania) and the American Allergy Supply (Houston Texas).

It is understood that the encasement of the present invention can be made into many more shapes than those depicted in Figures 1-4 and can be see-through, stretchable or both as defined herein.

The encasement of the present invention may also be made of a suitable see-through material 1 (see Figure 5). The term "see-through" as used herein refers to a material that you can see at least partly through, such as in women's hosiery or stockings. If such materials are used, while a window can be used, the need for window 2, as

depicted in Figures 1 through 4 may not be needed. In addition, the stretchability of such material has advantages as pointed out above. Suitable materials include, for example, those made of 100% nylon.

The encasement of the present invention may also be made of a suitable stretchable material **1**, whether see-through or not, that stretchably fits about the object as depicted in Figure 5. Suitable stretchable material includes disposable and washable material made from nylon, cotton, polypropylene or cellulose.

In addition, suitable materials include disposable pliable non-allergic materials known in the art such as films of polyethylene, polypropylene, polyester, nylon, polyvinyl chloride and blends of these. These materials also include fibrous, non-woven fabric, spun bonded non-woven fabric and non-woven cellulosic fibers. Other suitable materials include any other impermeable, particulate (particularly dust mites) proof disposable materials. It is also understood that the material of the present invention may be multi-layers of the disposable material mentioned above.

The encasement of the present invention includes a window **2** (see Figures 1-4), which allows the object contained inside of the encasement to be viewed. Suitable windows include those of reusable or disposable materials. Suitable windows can be constructed of clear plastic. Other suitable windows include a thin or clear fabric (such as used in nylons) or other materials, impermeable to particular matter while allowing the object inside the encasement to be viewed. It is understood that the encasement can have more than one window. The windows can be secured in place by conventional sewing. In addition, the windows can be glued or heat bonded in place.

The encasement of the present invention includes an enclosable means **3** (see Figures 1-4) and **2** (see Figure 5) that provides an opening in the encasement to place object (**4** or **2** respectively) and allows it to be closed or sealed inside the encasement while not allowing particulate matter to escape through the enclosable means. Suitable enclosable means include metal and plastic zippers. Other suitable enclosable means include Velcro<sup>®</sup>, buttons, snap closures and enclosable means such as those used in

ZIPLOC<sup>®</sup> plastic bags. If buttons or snap closure are used they should be spaced closely together as to provide a tight seal to prevent escape of particulate matter.

### Exemplification

An encasement was produced using an Aller-Ease cotton pillow cover purchased from Linens'n Things. A five-inch by five and a quarter inch opening was cut out of one side of the pillowcase using standard fabric scissors.

Then a clear plastic window was created by cutting out a square from a plastic cover from a bedding sheet, which was purchased from Linens'n Things. The window measured slightly bigger than the opening in the pillow cover. The plastic window was then placed over the opening and sewed into place using a standard sewing machine.

The commercially available pillow cover already contained an enclosable means in the form of a plastic zipper, so that none needed to be added.

The invention has been described in connection with the preferred embodiments. These embodiments, however, are merely for example and the invention is not restricted thereto. It will be understood by those skilled in the art, that other variations and modifications can easily be made within the scope of the invention as defined by the appended claims.